

- Page 13 -

CLAIMS:

I claim:

1. An apparatus for cutting sheet metal pieces from a sheet metal coil, said sheet metal coil having a coil axis, said apparatus comprising:

a coil support adapted to support said sheet metal coil such that same may rotate about said coil axis to unroll an end portion of said sheet metal coil;

a sheet support adapted to support said end portion for cutting;

a cutting head mounted above said sheet support and end portion and operative to cut through said end portion;

1005551-1094

- Page 14 -

a cutting head drive operative to move said cutting head back and forth along a first path substantially parallel to said coil axis;

a sheet metal drive operative to move said end portion forward and rearward along a second path substantially perpendicular to said coil axis;

a computer operative to control and coordinate said cutting head drive and said sheet metal drive such that said pieces are cut from said end portion.

2. The apparatus of Claim 1 further comprising a coil drive operable to rotate said sheet metal coil about said coil axis.
3. The apparatus of Claim 2 wherein said computer is operative to control said coil drive.
4. The apparatus of Claim 3 wherein said computer is operative to rotate said sheet metal coil in a sheet advancing direction wherein said sheet metal unrolls off said sheet metal coil, and in a sheet retracting

10033521 101901
T05T01 T252E001

- Page 15 -

direction wherein sheet metal rolls onto said sheet metal coil.

5. The apparatus of Claim 4 wherein said computer is programmed to rotate said sheet metal coil so as to maintain a slack portion of sheet metal between said sheet metal drive and said sheet metal coil.
6. The apparatus of Claim 1 further comprising a measuring device operable to transmit information respecting the position of said end portion along said second path to said computer, said computer then using this information to control said sheet metal drive.
7. The apparatus of Claim 5 further comprising a measuring device operable to transmit information respecting the position of said end portion along said second path to said computer, said computer then using this information to control said sheet metal drive and said coil drive.

10032524-104904
F06T0T F252E00T

- Page 16 -

8. The apparatus of Claim 6 wherein said measuring device comprises a wheel bearing against a surface of said end portion.
9. The apparatus of Claim 8 wherein said wheel comprises a resilient circumferential surface.
10. The apparatus of Claim 8 wherein said wheel comprises a plurality of teeth on the surface thereof.
11. The apparatus of Claim 1 further comprising a plurality of straightening rollers operative to flatten said sheet metal such that same lies flat on said sheet support.
12. The apparatus of Claim 1 wherein said sheet support is oriented such that there is an open space beneath said end portion under said first path such that cutting debris can fall through said open space.
13. The apparatus of Claim 12 wherein said sheet support comprises a pair of support rollers defining said open space there-between.

100524-101901

- Page 17 -

14. The apparatus of Claim 1 further comprising a guide bearing against at least one edge of said end portion.
15. The apparatus of Claim 14 wherein a first guide roller is fixed and bears against a first edge of said end portion, and a second guide roller is biased against an opposite second edge of said end portion.
16. The apparatus of Claim 15 wherein said first and second guide rollers are located adjacent to said first path, and further comprising a third roller fixed and bearing against said first edge of said end portion between said first guide roller and said coil, and a fourth guide roller biased against said second edge of said end portion between said second guide roller and said coil.
17. A method of cutting sheet metal pieces from a sheet metal coil, said sheet metal coil having a coil axis, said method comprising:

1003221-101901
T06T0T "T25E00T

- Page 18 -

positioning an end portion from said sheet metal coil to rest on a sheet support;

moving a cutting head back and forth above said end portion and said sheet support along a first path parallel to said coil axis to cut said end portion;

moving said end portion forward and rearward along a second path perpendicular to said coil axis;

coordinating the movements of said cutting head and said end portion along said first and second paths with a computer such that said pieces are cut from said end portion.

18. The method of Claim 17 further comprising rotating said sheet metal coil so as to maintain a slack portion of sheet metal between said sheet metal drive and said sheet metal coil.
19. The method of Claim 17 further comprising guiding said end portion along said second path.

10032521 101901